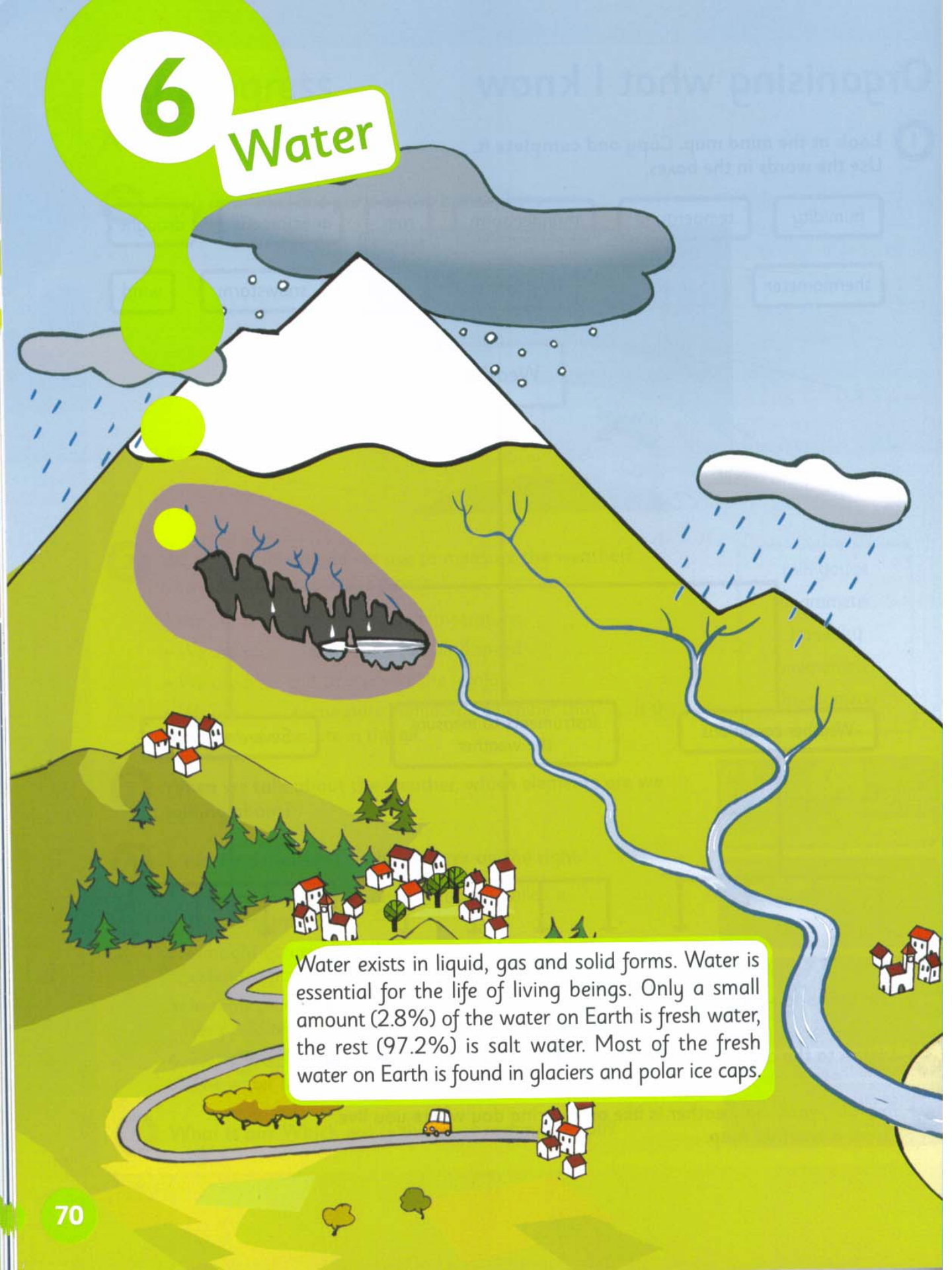


6

Water



Water exists in liquid, gas and solid forms. Water is essential for the life of living beings. Only a small amount (2.8%) of the water on Earth is fresh water, the rest (97.2%) is salt water. Most of the fresh water on Earth is found in glaciers and polar ice caps.

Listen and find. 26

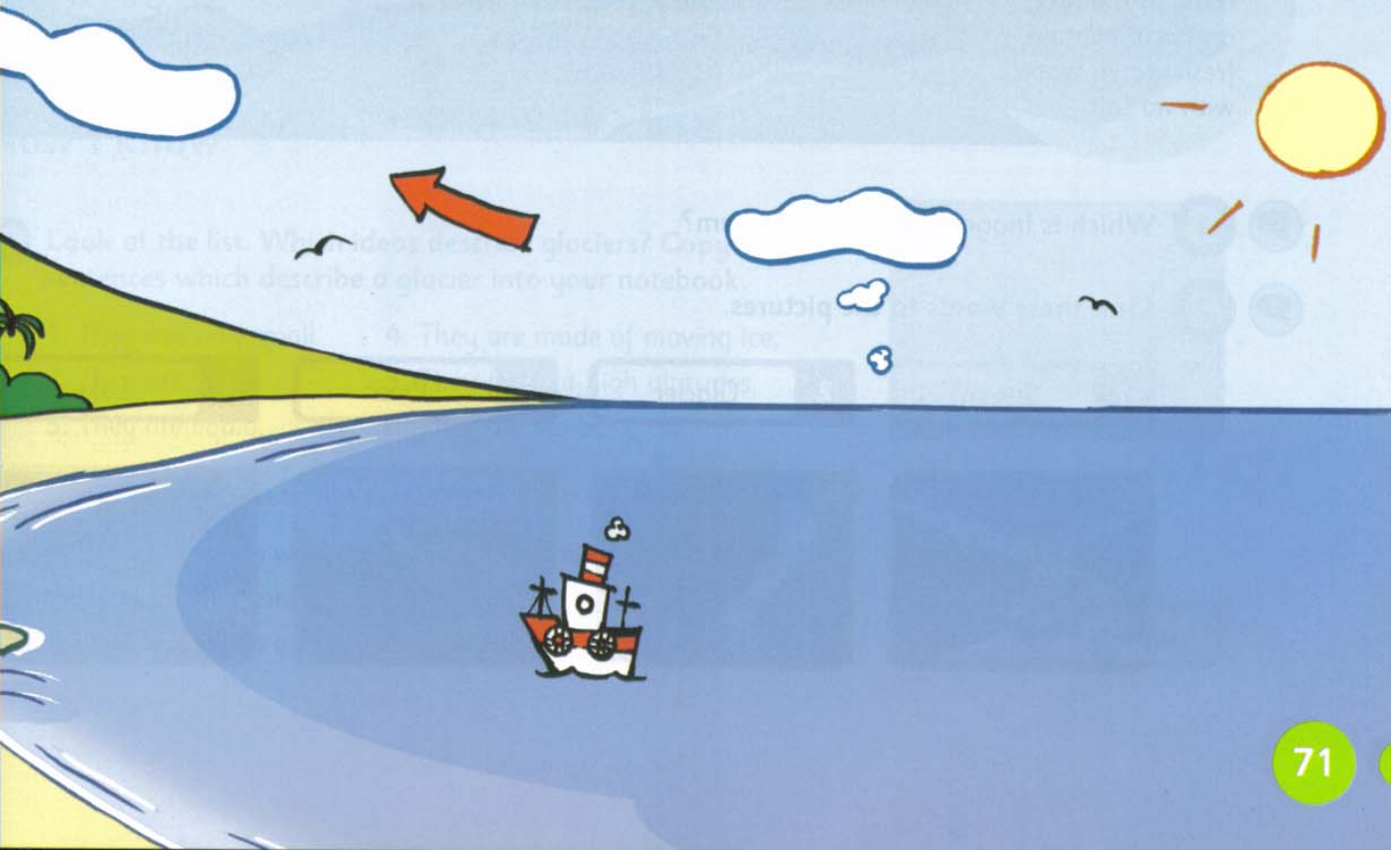
Listen. Which description describes groundwater? 27

Do you know any other source of fresh water?

Can you think of any ways we use water?

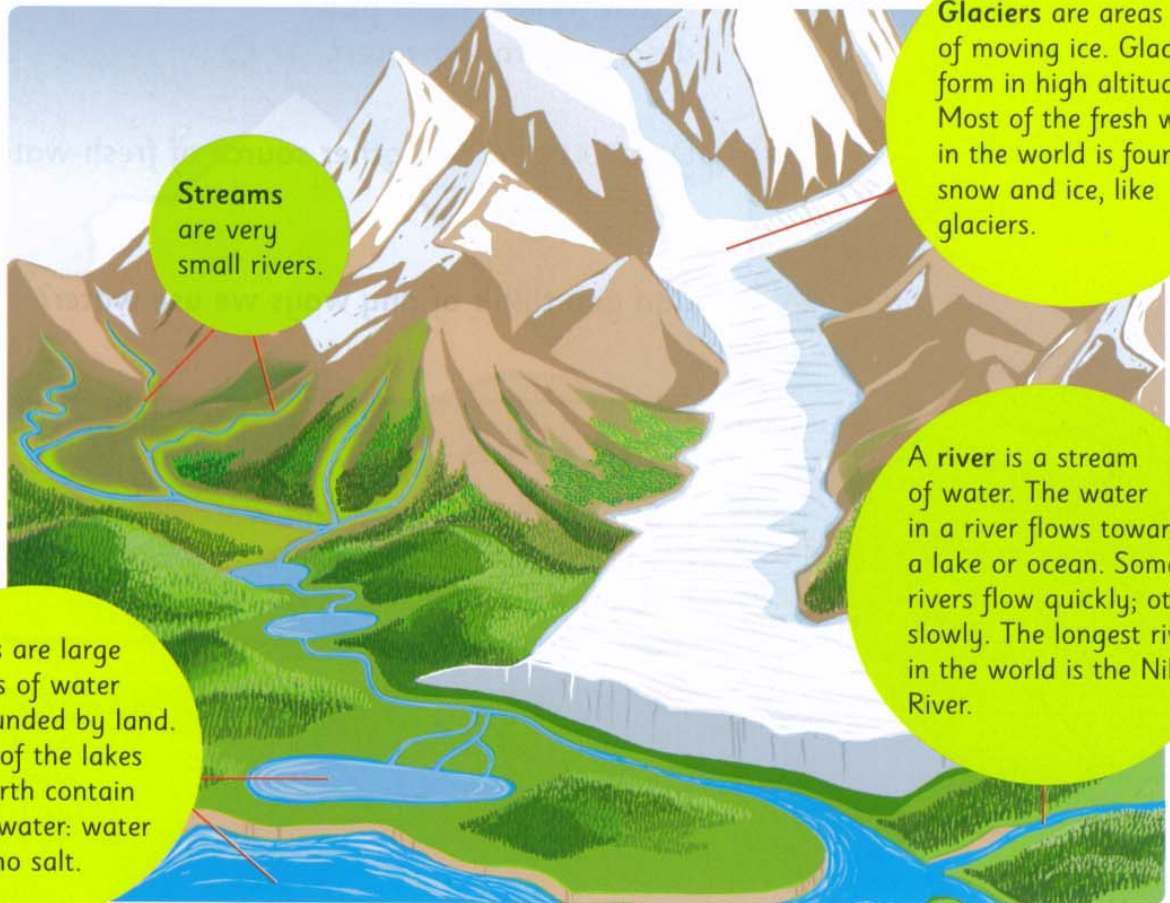
My words

Stream, fresh water, salt water, sandstone, clay, well, steam, fog, mist, crop, mill, to flow, to drill, to pump, to collect, to fill, to trap.



Water on the Earth's surface

Surface water



Streams are very small rivers.

Glaciers are areas of moving ice. Glaciers form in high altitudes. Most of the fresh water in the world is found in snow and ice, like glaciers.

Lakes are large bodies of water surrounded by land. Most of the lakes on Earth contain fresh water: water with no salt.

A **river** is a stream of water. The water in a river flows towards a lake or ocean. Some rivers flow quickly; others slowly. The longest river in the world is the Nile River.



1 Which is bigger, a river or a stream?



2 Link these words to the pictures.

1

Stream

2

Glacier

3

River

4

Lake



Groundwater

Groundwater is water found under the ground. Most groundwater comes from rainfall. Groundwater moves from high places like mountains or hills to lower places like valleys or plains. It moves very slowly.

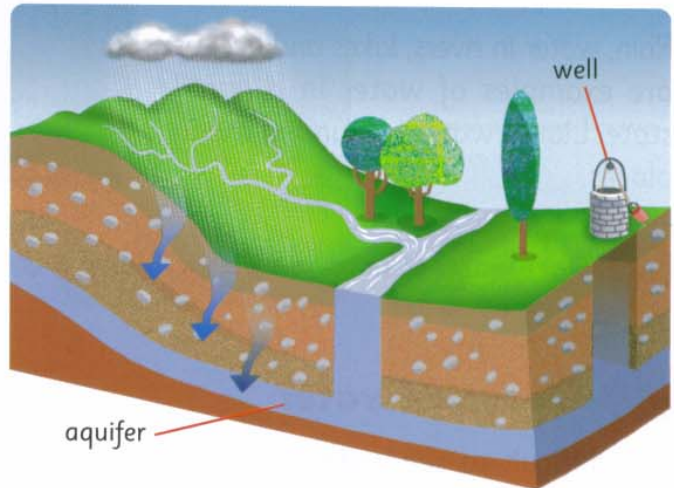
A **spring** is the place where the ground water meets the Earth's surface. Springs help fill rivers, streams, lakes and wetlands with water.



- 1 Have you ever seen a spring? What was it like?
Where did you see it?

Aquifer

We find groundwater in layers of sandstone called **aquifers**. Below an aquifer is a layer of clay that traps the water. To get groundwater out of aquifers, we drill wells and pump water through pipes.



Now I know

- Look at the list. Which ideas describe glaciers? Copy the sentences which describe a glacier into your notebook.

1. They are very small.
2. They are huge.
3. They are liquid.
4. They are made of moving ice.
5. They form at high altitudes.
6. They are warm.



- Copy and complete the sentences.

1. Groundwater is water found the ground.
2. Lakes usually contain water.
3. We use wells to get groundwater from

aquifers

fresh

under

States of water

We can find water in three different states: as a **solid**, a **liquid** and a **gas**.

Solid water

Ice, snow, and hail are three examples of water in the solid state. Liquid water freezes at 0 °C.



1

Can you think of places where we see water in a solid state?

Liquid water

Rain, water in rivers, lakes and oceans are examples of water in a liquid state. Liquid water is found in many places.



2

Does water take up more space when it is in its solid or liquid state?

Gaseous water

It is difficult to see water in its gaseous state; but steam, fog and mist are examples of water in its gaseous state.



My world fact

Snow is made up of snowflakes. Snowflakes are hexagonal and symmetrical. What other types of precipitation can you name?



Changes in water states

Evaporation: liquid to gas

When we heat liquid water to 100°C , it boils and becomes water vapour. This change from a liquid state to the gaseous state is called evaporation.



Condensation: gas to liquid

When vapour cools it becomes water. This change from the gaseous state to the liquid state is called condensation.

1 What's the difference between evaporation and condensation?

Solidification: liquid to solid

If we cool liquid water to below 0°C , it becomes ice. This is called solidification.



Fusion: solid to liquid

If we heat ice, it becomes water. This change from the solid state to the liquid state is called fusion.

Now I know

What are the three states of water?
Unscramble and write the words.

d o l s i

q u d l i i

s g a

Copy the definitions, then write the word in the correct place.

1. The change from a liquid state to a gaseous state →

condensation

fusion

2. The change from a gaseous state to a liquid state →

3. The change from a liquid state to a solid state →

4. The change from a solid state to a liquid state →

evaporation

solidification

The water cycle

The Earth has a limited amount of water. The water cycle is made up of four stages. Nature recycles water.



1

Does the Earth have a limited amount of water?

Precipitation

Rain and snow fall from clouds to the Earth's surface.

Condensation

Air contains water vapour. When warm air cools, water vapour turns into tiny water droplets. These droplets form clouds.

Evaporation

Energy from the Sun evaporates water from oceans, lakes, and rivers. Wind also causes evaporation.

Collection

Water falls on the Earth as precipitation. When it falls on the ground, it may become part of the groundwater that plants drink, or run over the ground and collect in rivers, lakes and oceans.



2

What are the four stages in the water cycle?



Uses of water

Recreational

Water is used for a lot of recreational activities. Some examples of recreational uses of water include: fishing, swimming, water-skiing, sailing and scuba diving.



Hydropower

Energy from moving water has been used for centuries. In the Roman Empire, water-powered mills were used to produce flour from grain. In China and the rest of the Far East, pumps were used to raise water to irrigation canals. Today, the main use of hydropower is for electricity production.



① How do we use water to produce energy today?

Agricultural

Approximately 69% of the water in the world is used for irrigation.



Home

At home, we use water for drinking, bathing, cooking and gardening. A normal home uses approximately 50 litres of water per person, per day, excluding water for gardens. In many parts of the world, people don't have access to water in their homes.



Now I know

🎯 **Correct** and **write** the sentences in your notebook.

1. Collection occurs when water falls to the Earth as groundwater.
2. The Moon evaporates water from oceans, lakes and rivers.
3. Rivers form when water vapour condenses into water droplets.

My turn

Cloud in a bottle 28

Materials:

2-litre clear plastic bottle

Warm water

Matches (adult help required to light matches)

1. Fill a bottle one-third full of warm water. Put the cap on. As the warm water evaporates, it adds water vapour to the air inside the bottle. Squeeze and release the bottle. You will notice that nothing happens. If the inside of the bottle becomes covered with condensation or water droplets, shake the bottle to get rid of them.
2. Take the cap off the bottle. Carefully light a match and hold it near the opening of the bottle.
3. Drop the match into the bottle and quickly put the cap on, trapping the smoke inside. Dust, smoke or other particles help make a cloud.
4. Squeeze the bottle hard and then release it. What happens? A cloud appears when you release and disappears when you squeeze. The third ingredient in making clouds is a drop in air pressure.



Our world

How to save water

Plants, animals and human beings need water to live.

Only a small amount (2.8 %) of the water on Earth is fresh water, the rest (97.2 %) is salt water. Most fresh water is found in glaciers and ice caps.

We all need to try and save water. About half the water we use at home is used for watering gardens, filling swimming pools and for washing cars. Indoors, we use water in the bathroom and kitchen.



Use water carefully.

- 1 **Think** of the things you do every morning (get up, brush your teeth, have breakfast, etc.) How many of these activities use water?

Turn off the tap while you brush your teeth.

Saving water is important

If you have a dishwasher in the kitchen, only use it when it is full.

Low-flush toilets and low-flow showerheads can also help save lots of water.

Take shorter showers.

Don't throw rubbish in the toilet, use the bin.



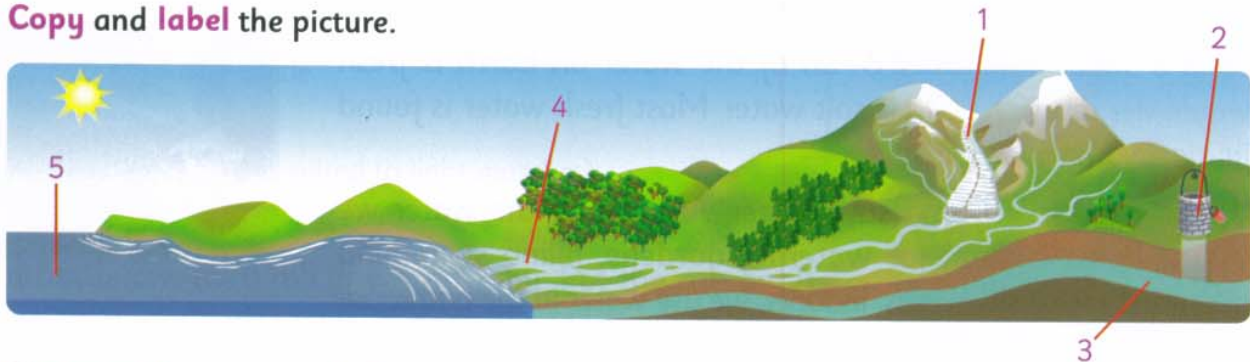
- 2 Can you **think** of any other ways to save water?

- 3 Can you imagine our world with no water?
Make a collage to show what it would look like.

My progress

Water

- 1 Copy and label the picture.



- 2 Unscramble and complete these words. They are all changes in water.

S...n

F...n

E...n

C...n

Idiiosinofctia

inofus

poraetniova

ntoicnoednas

- 3 What is a spring? Draw it.

- 4 Link these words to their pictures.



precipitation



collection



evaporation



condensation

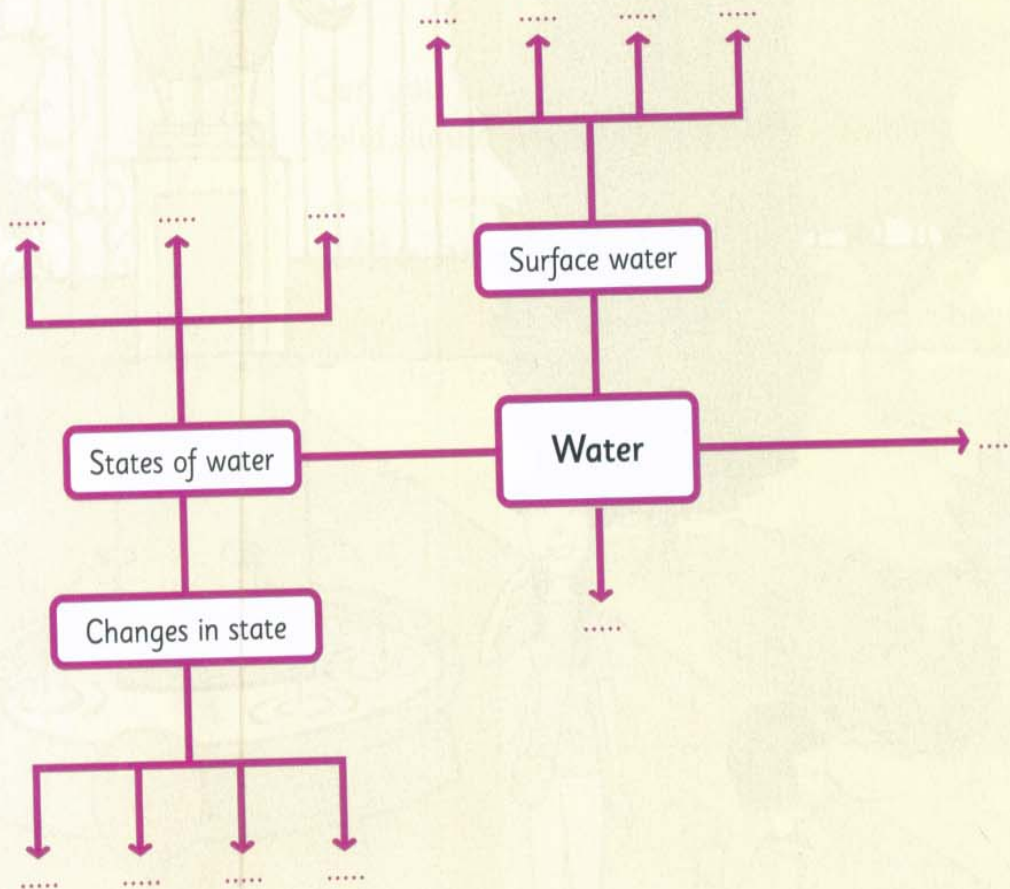
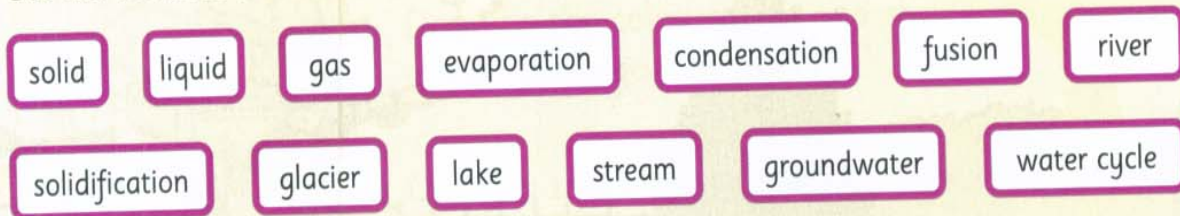
- 5 What are the three states of water? Draw an example of each of them.

- 6 Are these sentences true or false?

1. Glaciers form in all mountains.
2. Groundwater is water under the ground.
3. We can't find water in three different states.
4. When we heat liquid water up to 100 °C, it becomes water vapour.

Organising what I know

- 1 Look at the mind map. **Copy** and **complete** it.
Use the words in the boxes.



- 2 Can you **add** more words?

- 3 **Listen** to the definitions. Which states of water are described? 29

- 4 How much water do you use to ...

1. 7 to 20 litres
2. 60 to 90 litres
3. 5 to 15 litres

... brush your teeth?

... have a bath?

... flush the toilet?